

Claims

- [c1] What is claimed is:
1. A method for the generation and processing of signaling necessary to transmit information through a network, the method comprising the steps of:
Using a bus to transmit data on the network;
Having a plurality of devices on the bus;
Using a bus arbitration device to control conflict of data transmissions on the bus;
Having the data be encapsulated in packets with the packets having the following fields, an address field, a command field and a bi-directional data field; and
Having a plurality of the devices with the ability to serve as a master device as well as a slave device.
 - [c2] 2. The method of claim 1 in which said packets consist of an address field, a command field, a data field and an error correction field.
 - [c3] 3. The method of claim 1 which includes the steps of:
having a device switch to a master device; and
having the rest of the plurality of devices on the bus set as slaves.
 - [c4] 4. The method of claim 1 which includes the steps of:
setting up a plurality of devices on the bus in stand-by mode; and
having the plurality of devices in stand-by mode listen to the network without sending data or acknowledges.
 - [c5] 5. The method of claim 1 in which a master device sends a data packet through the bus to a slave device, an acknowledge bit is sent to the master device from the slave device for each received byte, and said data packet contains the address of the destination device.
 - [c6] 6. The method of claim 1 in which a device may switch to master while other devices remain as slave devices allowing any device to send data to any device connected to the bus.
 - [c7] 7. The method of claim 1 which includes the step of having a slave device

generate and send an acknowledge to the master device.

[c8] 8. The method of claim 1 which includes the follow steps on the addition of a new device on the network:

Setting the new device as a slave device; and

Resetting the new device as a master device if the new device needs to sends data.

[c9] 9. The method of claim 1 which includes the follow steps on the sending of data on the network:

Setting the device as a master device if it is not already set as a master device;

Checking the bus arbitration for availability of the bus;

Sending the data if the bus is available; and

Waiting a period of time if the bus is not free and repeat the previous two steps until the data is sent.

[c10] 10. A network comprising:

A bus to transmit data on the network;

A plurality of devices on the bus;

A bus arbitration device to control conflict of data transmissions on the bus;

Data that is encapsulated in packets with the packets having the following fields, an address field, a command field and a bi-directional data field; and

A plurality of the devices serving as a master device as well as a slave device.

[c11] 11. The network of claim 10 in which said packets consists of an address field, a command field, a data field and an error correction field.

[c12] 12. The network of claim 10 which comprises:

a device that switches to a master device; and

having the rest of the plurlarity of devices on the bus set as slave devices.

[c13] 13. The network of claim 10 which comprises:

setting up a plurlarity of devices on the bus in stand-by mode; and

having the plurlarity of devices in stand-by mode listens to the network without sending data or acknowledges.

[c14] 14. The network of claim 10 in which a master unit device sends a data packet through the bus to a slave device, an acknowledge bit is sent from the slave device for each received byte, and said data packet contains the address of the destination device.

[c15] 15. The network of claim 10 in which a device may switch to master while other devices remain as slave devices allowing any device to send data to any device connected to the bus.

[c16] 16. The network of claim 10 in which the slave device generates and sends an acknowledge to the master device.

[c17] 17. The network of claim 10 which comprises a new device which is set as a slave device and is reset to a master device if the new device needs to send data.

[c18] 18. The network of claim 10 which comprises:
a device that is set as a master device to send data if it is not already set as a master device, having the device checks the bus arbitration for availability of the bus, the device sends the data if the bus is available, the device will wait a period a period of time if the bus is not free and repeat the previous two steps until the data is sent.